

## Quizizz-online gamification on learning engagement and outcomes in English lecturing process

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### ABSTRACT

Gamification entails incorporating elements of games into non-game settings with the goal of motivating learners to actively participate in learning. Much literature highlighted the potential of gamification in enhancing learning interest; however, very few researches delved gamification of Quizizz online for learning grammar. This research explored the effects of Quizizz on learning engagement and outcome while studying grammar. This study involved English lecturer and 68 learners in the second semester of a private university in Ponorogo, Indonesia. The data in this research was analyzed using a qualitative approach through classroom-based ethnography, including lecturer interviews, observations, and scrutiny of Quizizz test performances. The interpretation involved examining trends in learners' engagement and mean scores of Quizizz tests. The results of the research indicated that the competitive features in Quizizz such as rankings and limited time enhanced their engagement, marked by increased discipline and active involvement. Nevertheless, the fluctuation in learning outcomes was observed due to variations in topic difficulty, particularly evident with topic 1 (conjunction) being less challenging compared to the more difficult topics 2 (subject-verb agreement) and 3 (passive voice). Topic 2, characterized by its complexity, posed the greatest difficulty, emphasizing the importance of customizing quiz difficulty levels to optimize the effectiveness of Quizizz in the learning process.

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## 1. INTRODUCTION

The significance of employing gamification in language education lies in its capacity to enhance the enjoyment and appeal of the learning process. Integrating gaming components like challenges, points, or levels, learners are spurred to be excited and actively involved in learning. Gamification involves incorporating game elements into education to enhance learners' motivation to participate, and it plays a role in game pedagogy, encouraging learners to achieve a more meaningful level of engagement [1]. Gamifying activity was a way to use digital game-based technique in the classroom and also provided the feedback and participation for learners [2], [3]. Gamification for learning language at different educational level has obtained increased renown. Game-based learning has been efficient to develop learners' participation in their learning [4], [5]. The holographic application for language learning can greatly influence learners' motivation to learn lexical resources. Learners' participation, interest, grades, and attitude toward English learning

enhanced as gamification approach was employed in learning English [6]. Learning engagement via gamification creates a ludic climate; this method fosters fancy English classroom [5], [7].

Quizizz is a competitive game and learners keep track of their progress when they take online Quizizz [8], [9]. Learners create online Quizizz interactively and take part in the activities using their devices. Quizizz offers online game-based activity and provides assessment platform for not only educators but also learners in any course [10], [11]. Quizizz is free of cost, and it is simple to use online formative assessment that lecturers implement to conduct learners' language studies [7], [12]. The main features of Quizizz are timely access, completion of quiz, and study segment. The input materials in Quizizz include scoring and ranking together with various answers [13]. Followed by the assessment system, learners see all directions in which the correct answers can be found for each question. As the game-based learning platform, Quizizz became well-known when the COVID-19 pandemic forced learners to complete the coursework from home. Even learners with very little experience with online gaming can easily navigate Quizizz's simple interface [9], [14]. Because of its interpretive feature, learners are able to play Quizizz and use its interface for teaching and learning relatively easily. Furthermore, Quizizz provides learners with a non-diegetic interface that makes it simple for them to see how they stack up against their peers [15], [16].

Quizizz researches are conducted in different countries involving participants of varying ages. In Turkey, quizzes are useful for lexical resources English lecturers often employ game-app to attract learners' interest in the learning. However, the researchers get a scarcity on this subject undertaken in grammar course. Many English lecturers often implement gamification application to capture their learners' attention in both synchronous and asynchronous learning environment. Still, few researches deal with Quizizz-online in English learning process particularly in grammar course. As a result, the researchers investigate how Quizizz affects learners' engagement and grammar learning outcomes. The problem discussed in this paper is the effect of Quizizz-online gamification on engagement and English learning outcomes. This research aims at exploring how the use of Quizizz in the context of English language learning, especially in grammar learning, affects learners' levels of engagement and learning outcomes. This research is an effort to create pedagogical innovation by revealing the potential of employing Quizizz-online which can significantly change the English learning environment. To answer aforesaid issues, the research questions have been proposed as:

- i) How does Quizizz-online gamification influence learners' engagements in English learning context?
- ii) How does Quizizz-online gamification influence learners' outcomes in English learning context?

## 2. RELATED WORKS

### 2.1. Learner engagement

Learner engagement can be defined within the context of engaged learning, considering two key elements: the involvement in activities that stimulated active cognitive processes, driven by the meaningful nature of the learning environment, and the manner in which these activities were executed [17]. This is comparable with research by Ginting [18] that engaged learners demonstrate readiness to practice, welcome feedback on their work, and independently employ problem-solving approaches. Active participation in learning, which is an essential part of learning engagement, plays a significant part in establishing a productive learning environment. Additionally, discipline in the classroom is positively impacted by active participation [19]. Referring to Liu and Moeller [20], active learners adhere to rules and disciplinary norms more closely, which makes the learning environment more structured and encouraging for all learners. As a result, learners' engagement not only enhances their learning process but also contributes to more effective discipline management in the classroom.

A number of affective factors are relevant to learner engagement, such as quantity and quality of learners' participation in their courses and learners' confidence in completing assignments on time to uphold discipline. High self-confidence encourages learners to take on challenges and tasks more productively, which includes finishing activities in class on time [17], [21]. Engaged learners tend to exhibit greater responsibility and commitment to the tasks, thereby serving conducive environment for adhering to rules and disciplinary norms in the classroom setting. In a more general context, it can be inferred that learners' engagement is determined by affective factors, such as the quantity and quality of learners' self-participation, play a vital role in establishing a disciplined and encouraging learning environment, positively influencing the learning experience and discipline management in the classroom.

### 2.2. Learner outcome

Learning outcomes serve as benchmarks for the success of a program in academia. They offer an understanding of the achievable goals when enrolling in a specific class, whether the program is a degree or a short course [22]. The utilization of learning outcomes aims to create transparency in the evaluation processes for learners and teachers, aiding teachers in choosing appropriate learning techniques. This is relevant to previous study [23], [24] who identify that this method, which used a student-centered approach,

highlights the active role that learners play in the learning process. Learning outcomes served as fundamental components in establishing a transparent higher education. The introduction marks a shift from the conventional lecturer-centered approach to a learners-centered one, emphasizing the significance of learning over teaching [25], [26].

In this context, learning outcomes participate significantly in the evaluation of higher education's learning processes. Referring to Kennedy *et al.* [27], learning outcomes offer academics a framework to precisely identify and communicate to learners what knowledge or skills they should acquire as evidence for assessment. Simultaneously, they encourage learners to actively participate in the learning process, allowing them to determine when they submit their evidence. Additionally, learning outcomes serve as facilitators for transferable skills, the acknowledgement of previous learning, including certified and experiential education, thereby contributing to broadening participation across the university.

### 3. METHOD

#### 3.1. Research design

This study's qualitative approach adopted classroom-based ethnography, roots in the fundamental concept of ethnography, which entails studying individuals in their natural environments or fields [28]–[30]. Similarly, classroom-based ethnography constitutes a methodical examination involving thorough fieldwork, seeking to comprehend the internal dynamics of a school environment; it captures social meanings and everyday activities through methods that requires the researcher to actively participate in the setting, sometimes engaging directly in the activities [31]–[33]. In the context of classroom-based ethnography approach, researchers did not just observe from afar; they actively engaged in the activities unfolding within the class environment. This direct involvement allowed them to obtain profound insights into the inner workings of the setting, as well as the social significance and routine occurrences within it. Actively participating, through observation or interviews, researchers could promptly respond to the situations, leading to a deeper comprehension and more varied viewpoints on classroom life.

#### 3.2. Participant

The existing research had involved second semester English lecturer and his second semester cohorts of learners studying English at a private university in Ponorogo, Indonesia. The lecturer was male, in his mid-39s, who had been teaching academic writing, advanced grammar, and research methodology for more than eight years. This research was conducted in advanced grammar course, which consisted of two credit hours and met once a week. The subjects that were the focus of this research were conjunctions, subject-verb (SV) agreement, and passive voice. As for the two learners' cohorts, each comprised 68 learners-the participants' demographic profile was displayed in Table 1. The decision to focus on them in this research stemmed from preliminary research indicating that they got common difficulties in learning English following the pandemic including poor learning outcome and low engagement due to abrupt shifts from online to offline learning environments.

Table 1. Participant demographic profile

Participant	Gender	Ages	Class	The number of learners
Learners	Female	18-19	C1	35
	Male	18-19	C2	33
Teacher	Male	The mid-38	Teaching exposure: >8 years	

#### 3.3. Data collection

In order to gather information for the aforementioned study, test results from learners as well as interviews and observation were used. The purpose of the instruction observation process was to observe how learners participated in class. The learners' engagement was analyzed based on their participation in Quizizz online game and their punctuality in joining the quiz. The observation was carried out observation checklist including both engagement criteria to pay heed the enhancement trend. The researchers monitored the engagement indicators like discipline and active participation while keeping an eye on learning environment. While observing learners' outcomes, the second inquiry for research was addressed by analyzing the learners' Quizizz online game scores results.

Aside from the test and the observation, an interview with lecturer was conducted to investigate learners' engagement and outcomes from the perspective of the lecturer. On October 12, 2023, a structured interview was held, consisting of five questions that served as the central discussion points and included the

learners' data. Before the interview, researchers examined the overall trends identified from test and interview results. These trends were examined during the interview, and the lecturer's analysis of the causes of the trends was investigated. The study involved gathering data through six meetings and six game quizzes. Table 2 displays the data-collection summary.

Table 2. Data-gathering summary

Class meeting	Section	Subjects	Test	Data collected		
				RQ-1 Observation	Interview	RQ-2 Test outcome
1	1	Conjunction	Test 1	√	√	√
2			Test 2	√		√
3	2	SV agreement	Test 1	√	√	√
4			Test 2	√		√
5	3	Passive voice	Test 1	√	√	√
6			Test 2	√		√

### 3.4. Data analysis

Active participation and discipline trend data were tallied using the observation checklist. Next step, the transcripts of interview had been coded for the analysis of learning outcome and learners' engagement, in relation to the data for two research inquiries. Learners' test results were analyzed using general tendency mean, and the trend was observed by analyzing each test's mean score. Cross-checking was done on the data analysis results to validate the finding trustworthiness and correctness. The research methodology came to the conclusion that employing a classroom-based ethnographic approach provided a structured and thorough method for understanding intricate phenomena in the classroom. Through direct observation, interaction with learners, and lecturer interviews, this approach allowed for a through understanding of the use of Quizizz and its effects on learners' involvement and academic achievements. As a result, this solution endeavored to provide a holistic comprehension of classroom learning dynamics, especially during the pandemic-driven shift from online to in-person learning.

## 4. RESULTS AND DISCUSSION

### 4.1. Results

#### 4.1.1. Quizizz influence on learners' engagement

The observation checklist shows that learners were generally more disciplined and actively participating, indicating a positive trend. The analysis of the learners' participation in conjunction with the topic was notably low, as shown in Figure 1, with the discipline and active engagement aspect scoring 64.8%. Precisely, Figure 1 (55.1%) demonstrated that, of 68 learners, 37 completed on time, and 9 completed it after the deadline. More precisely, Figure 1 (55.1%) showed that, of the 68 learners, 46 finished the conjunction quiz, with 37 learners did it punctual, and 9 learners doing the quiz late. In contrast, 42 learners completed the second conjunction quiz within the allotted time, with four learners finishing late.

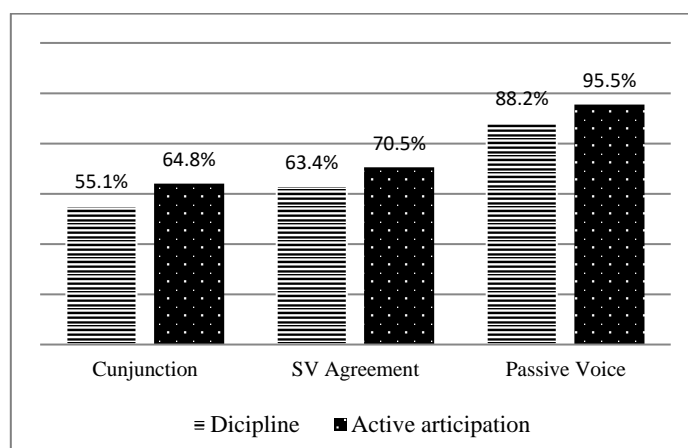


Figure 1. Learners' engagement summary

The analysis of Figure 1 presents that SV agreement went up for both indicator of learners' discipline and active participation in the gamified Quizizz. Learners' participation score reached 70.5%, with 48 learners taking both tests, while the indicator of discipline scored 63.4% with 43 learners joining both tests punctually. Likewise, another enhancement occurred in the final test observed, passive voice. With an almost perfect active participation score of 95.5%, only three learners were missing from test 1 and 2. The indicator of discipline, 88.2% score was conveyed with 59 and 61 learners accomplishing the test on time in test 1 and 2. The observation result has been presented in Table 3.

Table 3. Observation result

Indicator	Conjunction		SV agreement		Passive voice	
	Test 1	Test 2	Test 1	Test 2	Test 1	Test 2
Discipline	37	38	43	43	59	61
Active participation	46	42	48	48	65	65

Quizizz questions that offered a well-balanced range of difficulty levels, direct answers, live scores demonstrated greater efficacy in motivating learners. The live score features in Quizizz could positively influenced learners' participation by offering feedback on their quiz performance. Observing their scores in real-time as they answered the questions enabled them to gauge their grasp of the material. This created a more dynamic and motivating learning environment, fostering active participation and a clearer awareness of their learning progress. The interview about using Quizizz in classroom clearly narrated how gamifying language learning through Quizizz had significantly boosted involvement. During the first subject lecture, the lecturer stated that learners' participation enhanced as Quizizz presented interactive grammar question and provided immediate feedback after questions had been answered.

*“Quizizz enhanced the excitement of learning grammar through engaging quiz questions and prompt feedback. My students could quickly identify their correct or incorrect answers, fostering a more interactive learning experience. Through constructive feedback, students felt more comfortable and confident in dealing with learning material. This could reduce anxiety levels and make them more motivated to participate actively.”* (Lecturer)

Regarding the use of Quizizz in subject 2, where learners' participation increased, the lecturer attributed this rise to game elements' incorporation to the learning activity. He expressed concern that the learners' discipline rose at 70.5%. The interview results indicated that Quizizz formats incorporating competitive elements, like rankings or time limits typically increased learners' discipline as they get involved in an intriguing challenge. The incorporation of rankings, such as “leader board”, introduced a competitive aspect to the learning process, encouraging learners to aim for higher position. This competitive drive boosted motivation, prompting them to actively engage in order to outperform their peers. More specifically, he said that:

*“From what I have observed, the leaderboard really encouraged my students. When they saw their rankings, they got more motivated to participate in answering questions and stick to the time discipline. They started to enjoy a friendly competition and wanted to do their best to show their skills. With features like leaderboards, they could see how well they and their classmates were doing, inspiring them to improve and compete in a positive way.”* (Lecturer)

Therefore, employing Quizizz with an appropriate difficulty level, direct feedback, and competitive feature such as leader board has effectively boosted learners' involvement, and self-discipline in the learning process.

#### 4.1.2. Quizizz influence on learners' outcomes

Pertinent to learning outcomes, the overall trend demonstrated fluctuations. In order to determine the effects of gamifying online quizzes on learners' outcomes, this research analyzed learners' performance. The mean score for each quiz taken on each of the three subjects under observation was displayed in Figure 2. The test was administrated as part of the teaching and learning process (test 1) and formative assessment (test 2). To ensure that the changes made were limited to the subjects that were intended for the quizzes, all of the quizzes used the same template. Following the introduction to Quizizz, the learners became familiar with the test format.

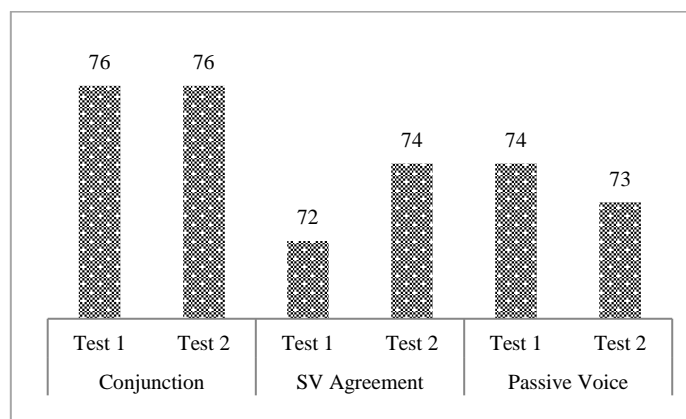


Figure 2. The quizzes average score

Figure 2 demonstrates that there was no discernible increase in the learning outcome despite the trend's fluctuations. For test 1 and 2, the subject of conjunction, which dealt with coordinating conjunction, subordinating conjunction, and conjunctive adverb, had the highest mean score of 76. Subsequently, of all the subjects examined, SV agreement which was about the grammatical rule had the lowest means, scoring 72 and 74 for test 1 and 2. The score of 74 and 73 became the stagnant means for the final, passive voice.

An interview with the lecturer revealed two primary causes for the fluctuations in learning outcomes. These reasons included variations in the difficulty levels of each topic and difference in the instructional design employed. The first reason was that conjunction and its questions were comparatively easier than those in subject 2 and 3. Conjunction was more common and well-liked by learners than the more serious subjects covered in subject 2 (SV agreement) and subject 3 (passive voice). The next reason was that the lecturer observed enhanced overall performance, characterized by increased participation during the session, elucidating the elevated mean score. Conversely, topics 2 and 3 presented greater challenges than topic 1. Mastering the rules of SV agreement required a sophisticated understanding of sentence structure, including variations based on singular or plural subjects, tenses, and sentence types. Similarly, the utilization of the passive voice required an advanced understanding of sentence structure. The identification and formation of passive sentences could be challenging due to their structural differences from active sentences.

What had been done previously on problem was a study that investigated how engaged and disciplined learners were employing Quizizz platform to learn English. To boost learners' engagement and motivation, Quizizz has included interactive features such as real-time score updates and feedback. To learn more about the lecturer's views regarding the influence of Quizizz on learning outcomes and learners' engagement, an interview with him was also undertaken. The availability of research that went more deeply into the effects of Quizizz on learners' engagement and learning outcomes for learning grammar was novel in this context. This research explored the factors affecting learners' engagement and learning outcomes in more detail, such as topic difficulty variations, various instructional strategies, and the influence of game elements.

#### 4.2. Discussion

The quizzes on Quizizz are often structured with adjustable difficulty levels, fostering a sense of discipline among learners as they strive to overcome challenges and elevate their scores. The imposition of time limits not only introduces a competitive element but also emphasizes the importance of discipline in responding promptly and appropriately to questions (Table 3). In line with the findings of this study, Quizizz introduces personal challenges by incorporating customizable difficulty levels and time constraints [16]; these elements collectively inspire learners to optimize their personal achievements and uphold discipline while engaging with the questions. However, this does not imply that the lecturer abandons the classroom without guidance. The lecturer not only supervises but also interacts with learners to assess their discipline and monitor their progress [7], [13], [24]. Educational tests administered through Quizizz simply engage for second semester learners to learn grammar. Quizizz enhances learners' involvement through interactive features such as leaderboards and instant feedback. The uses of gamification in Quizizz, such as medals or badges motivate learning experience for learners. This is comparable with previous study [34], [35] that utilizing interactive elements like leaderboards, Quizizz has effectively enhanced student involvement in the learning, fostering motivation, competition, and an engaging educational experience.

The types of questions related to conjunctions, SV agreement, and passive voice in Quizizz can significantly influence learners' engagement in answering questions. Firstly, challenging and diverse questions can capture learners' interest in finding solutions, boosting their activity in seeking the correct answers. Secondly, Quizizz's interactive format and immediate feedback enhance their involvement in addressing grammar queries. This is relevant to study by Degirmenci [7] who identifies that well-constructed questions can boost learners' understanding by encouraging active engagement, relevance to their life experiences. In line with the finding of this research, strategically-designed questions can accommodate diverse learning style, provide deeper context regarding the material to pursue further learning [34].

The significant advancement in learners' engagement is the evident through learners' discipline and their participation with Quizizz implementation. On the contrary, learners' outcome does not illustrate the same progress. The general trend of learning score employing gamified approach fluctuates (Figure 2). Quizizz integration has already engaged the English learners, yet it does not boost their English proficiency. The highest result of Quizizz in conjunction is demonstrated as it is simpler compared to both material two (SV agreement) and material three (passive voice). A thorough grasp of sentence structure is necessary to fully comprehend the SV agreement's rules. Due to the intricacy and the requirement for a thorough grasp of grammar, learners become confused. Likewise, the use of passive voice requires further understanding of sentence structure and the role of the agent in an action.

Online gamification with more exercises is preferable for teaching learning process. Lecturers should employ information and communication technology (ICT) tool. Policymakers need to provide adequate ICT services to optimize the classroom's environment for learning [36], [37]. Self-regulated learning (SRL) is also possible as the strategy of classroom to encourage additional instructional learning. SRL has been identified as a factor which contributes to perceive the learning environment [38]. This research also reveals that the activity of Quizizz in the last two subjects is relatively lower than in subject 1. Aside from adapting the prior discussed theoretical framework, ICT, SRL, and subject familiarity, learners can conduct feedback to abolish low English comprehension. Feedback is information a lecturer or speaker including other learners give to learners on how well they are going to assist the learners enhance specific point [34]. Feedback on the learners' linguistic awareness heightens their excitement especially when their level of proficiency in English does not meet the expected outcomes [2], [23], [39], [40]. Learners will learn and comprehend why their answers may be incorrect and learn how to improve their English proficiency through feedback; it could affect the improvement of English employing Quizizz pedagogical games.

## 5. CONCLUSION

The study investigates the gamification's effect on learners' engagement and learning outcomes through online quizzes. The result indicates a steady rise in learning engagement; however, the learning outcomes do not show a similar pattern. First, learners' engagement in process of learning has been investigated based on active participation and discipline in gamified quizzes. Both indicators present constant enhancement in all topics investigated spanning six meetings, each accompanied by six tests. Secondly, there is variability in the learning outcomes, indicating that online gamification has not have a positive impact on learners' performance. Gamification and the use of online quizzes can encourage greater involvement of learners in online instructional games. However, a notable and consistent improvement in learning outcomes was not observed. Therefore, lecturers should incorporate gamified learning platforms in the English learning process to address engagement issues. While this current research may be constrained in terms of study's scope and data analysis, it offers crucial context for understanding how gamification initiatives affect language learning among English as foreign language (EFL) learner with low proficiency. Additional research efforts could be directed towards exploring a broader research scope to either confirm or scrutinize the findings of the current research.

## REFERENCES

- [1] C. Dichev and D. Dicheva, "Gamifying education: what is known, what is believed and what remains uncertain: a critical review," *International Journal of Educational Technology in Higher Education*, vol. 14, no. 1, p. 9, Dec. 2017, doi: 10.1186/s41239-017-0042-5.
- [2] M. Riar, B. Morschheuser, R. Zarnekow, and J. Hamari, "Gamification of cooperation: a framework, literature review and future research agenda," *International Journal of Information Management*, vol. 67, p. 102549, Dec. 2022, doi: 10.1016/j.ijinfomgt.2022.102549.
- [3] K. Welbers, E. A. Konijn, C. Burgers, A. B. de Vaate, A. Eden, and B. C. Brugman, "Gamification as a tool for engaging student learning: a field experiment with a gamified app," *E-Learning and Digital Media*, vol. 16, no. 2, pp. 92–109, Mar. 2019, doi: 10.1177/2042753018818342.
- [4] M. Ricciardi and F. Filomena, "Gamification and learning: a review of issues and research," *Journal of e-learning and Knowledge Society*, vol. 11, no. 3, pp. 13–21, 2015.




- [5] A. Rosa-Castillo, O. García-Pañella, E. Maestre-Gonzalez, A. Pulpón-Segura, A. Roselló-Novella, and M. Solà-Pola, "Gamification on Instagram: nursing students' degree of satisfaction with and perception of learning in an educational game," *Nurse Education Today*, vol. 118, p. 105533, Nov. 2022, doi: 10.1016/j.nedt.2022.105533.
- [6] N. Azzouz and M. Gutierrez-Colon Plana, "Effect of gamification on students' motivation and learning achievement in second language acquisition within higher education: a literature review 2011-2019," *The EUROCALL Review*, vol. 28, no. 1, pp. 57–69, 2020.
- [7] R. Degirmenci, "The use of Quizizz in language learning and teaching from the teachers' and students' perspectives: a literature review," *Language Education and Technology (LET Journal)*, vol. 1, no. 1, pp. 1–11, 2021.
- [8] L. S. Huei, M. Md Yunus, and H. Hashim, "Strategy to improve English vocabulary achievement during COVID-19 epidemic. Does Quizizz help?" *Journal of Education and e-Learning Research*, vol. 8, no. 2, pp. 135–142, 2021, doi: 10.20448/journal.509.2021.82.135.142.
- [9] C. C. A. Yunus and K. H. Tan, "Exploring a gamified learning tool in the ESL classroom: the case of Quizizz," *Journal of Education and e-Learning Research*, vol. 8, no. 1, pp. 103–108, 2021.
- [10] W. Handoko, E. Mizkat, A. Nasution, Hambali, and J. Eska, "Gamification in learning using Quizizz application as assessment tools," *Journal of Physics: Conference Series*, vol. 1783, no. 1, p. 012111, Feb. 2021, doi: 10.1088/1742-6596/1783/1/012111.
- [11] T. A. Munuyandi, S. Husain, M. A. A. Jabar, and Z. Jusoh, "Effectiveness of Quizizz in interactive teaching and learning Malay grammar," *Asian Journal of University Education*, vol. 17, no. 3, pp. 109–118, 2021, doi: 10.24191/ajue.v17i3.14516.
- [12] P. Anunpattana, M. N. A. Khalid, H. Iida, and W. Inchamnan, "Capturing potential impact of challenge-based gamification on gamified quizzing in the classroom," *Heliyon*, vol. 7, no. 12, p. e08637, Dec. 2021, doi: 10.1016/j.heliyon.2021.e08637.
- [13] N. Inayati and A. A. Waloyo, "The influence of Quizizz-online gamification on learning engagement and outcomes in online English language teaching," *Journal on English as a Foreign Language*, vol. 12, no. 2, pp. 249–271, Jun. 2022, doi: 10.23971/jeffl.v12i2.3546.
- [14] M. Şahin, "Classroom response systems as a formative assessment tool: investigation into students' perceived usefulness and behavioural intention," *International Journal of Assessment Tools in Education*, vol. 6, no. 4, pp. 693–705, Jan. 2020, doi: 10.21449/ijate.576249.
- [15] A. T. Pham, "University students' attitudes towards the application of Quizizz in learning English as a foreign language," *International Journal of Emerging Technologies in Learning (IJET)*, vol. 17, no. 19, pp. 278–290, Oct. 2022, doi: 10.3991/ijet.v17i19.32235.
- [16] M. N. Y. Wen and A. A. Aziz, "The use of Quizizz as an online teaching and learning assessment tool in an ESL classroom: a systematic literature review," *International Journal of Academic Research in Progressive Education and Development*, vol. 11, no. 1, pp. 932–949, Mar. 2022, doi: 10.6007/IJARPE/v11-i1/11929.
- [17] A. Yong and J. Rudolph, "A review of Quizizz – a gamified student response system," *Journal of Applied Learning & Teaching*, vol. 5, no. 1, pp. 146–155, May 2022, doi: 10.37074/jalt.2022.5.1.18.
- [18] D. Ginting, "Student engagement and factors affecting active learning in English language teaching," *VELES Voices of English Language Education Society*, vol. 5, no. 2, pp. 215–228, Oct. 2021, doi: 10.29408/veles.v5i2.3968.
- [19] J. A. Gray and M. DiIorio, "The effects of student engagement, student satisfaction, and perceived learning in online learning environments," *International Journal of Educational Leadership Preparation*, vol. 11, no. 1, pp. 1–20, 2016.
- [20] X. Liu and A. J. Moeller, "Promoting learner engagement through interactive digital tools," in *Central States Conference on the Teaching of Foreign Languages*, 2019, pp. 33–47.
- [21] F. Martin and D. U. Bolliger, "Engagement matters: student perceptions on the importance of engagement strategies in the online learning environment," *Online Learning*, vol. 22, no. 1, pp. 205–222, Mar. 2018, doi: 10.24059/olj.v22i1.1092.
- [22] C. Abela and B. R. Fraumeni, *Student engagement: evidence-based strategies to boost academic and social-emotional results*. McREL International, 2019. [Online]. Available: <https://eric.ed.gov/?id=ED600576>
- [23] A. Paolini, "Enhancing teaching effectiveness and student learning outcomes," *The Journal of Effective Teaching*, vol. 15, no. 1, pp. 20–33, 2015.
- [24] A. G. Holmes, "Learning outcomes—A good idea, yet with problems and lost opportunities," *Educational Process: International Journal*, vol. 8, no. 3, pp. 159–169, Sep. 2019, doi: 10.22521/edupij.2019.83.1.
- [25] M. Mahajan and M. K. S. Singh, "Importance and benefits of learning outcomes," *IOSR Journal of Humanities and Social Science*, vol. 22, no. 3, pp. 65–67, Mar. 2017, doi: 10.9790/0837-2203056567.
- [26] A. R. Timor, Ambiyar, O. Dakhi, U. Verawadina, and M. M. Zagoto, "Effectiveness of problem-based model learning on learning outcomes and student learning motivation," *International Journal of Multi Science*, vol. 1, no. 10, pp. 1–8, 2021.
- [27] D. Kennedy, A. Hyland, and N. Ryan, *Writing and using learning outcomes: a practical guide*. Cork: University College Cork, 2007.
- [28] J. Arlinwibowo, H. Retnawati, and B. Kartowagiran, "The impact of ICT utilization to improve the learning outcome: a meta-analysis," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 11, no. 2, pp. 522–531, Jun. 2022, doi: 10.11591/ijere.v11i2.22112.
- [29] K. Blennow and T. Grammes, "Ethnographies of social science education," *JSSE-Journal of Social Science Education*, vol. 20, no. 4, pp. 1–11, 2021.
- [30] L. X. Jensen, M. Bearman, D. Boud, and F. Konradsen, "Correction to: digital ethnography in higher education teaching and learning—a methodological review," *Higher Education*, vol. 84, no. 5, pp. 1163–1164, Nov. 2022, doi: 10.1007/s10734-022-00869-x.
- [31] A. Abdullah, M. Z. Ishak, R. F. Peters, and A. Kasan, "Classroom ethnography: adapt or adopt," *International Journal of Humanities, Philosophy and Language*, vol. 2, no. 8, pp. 15–27, Dec. 2019, doi: 10.35631/ijhpl.28002.
- [32] E. Simanjuntak, Suryanto, and W. Hendriani, "Using ethnography in psychological research: challenges and opportunities," *Buletin Psikologi*, vol. 30, no. 1, pp. 45–58, Jun. 2022, doi: 10.22146/buletinpsikologi.56215.
- [33] V. Antoniadou and M. Dooley, "Educational ethnography in blended learning environments," in *Qualitative approaches to research on plurilingual education/Enfoques cualitativos para la investigación en educación plurilingüe*, E. Moore and M. Dooley, Eds. Dublin: Research-publishing.net, 2017, pp. 237–263, doi: 10.14705/rpnet.2017.emmd2016.630.
- [34] V. Atidakis, R. Geambasu, P. Godefroid, M. Polishchuk, and B. Ray, "Pythia: grammar-based Fuzzing of REST APIs with coverage-guided feedback and learning-based mutations," pp. 1–12, 2020, [Online]. Available: <http://arxiv.org/abs/2005.11498>
- [35] B. Ross, A.-M. Chase, D. Robbie, G. Oates, and Y. Absalom, "Adaptive Quizzes to increase motivation, engagement and learning outcomes in a first year accounting unit," *International Journal of Educational Technology in Higher Education*, vol. 15, no. 1, p. 30, Dec. 2018, doi: 10.1186/s41239-018-0113-2.






- [36] S. Y. Mei, S. Y. Ju, and Z. Adam, "Implementing Quizizz as game based learning in the Arabic classroom," *European Journal of Social Science Education and Research*, vol. 5, no. 1, pp. 194–198, Apr. 2018, doi: 10.2478/ejser-2018-0022.
- [37] S. Chollampatt and H. T. Ng, "A multilayer convolutional encoder-decoder neural network for grammatical error correction," in *Proceedings of the AAAI Conference on Artificial Intelligence*, Apr. 2018, pp. 5755–5762, doi: 10.1609/aaai.v32i1.12069.
- [38] N. Olmedo-Torre, O. F. Vidal, J. L. Castillo, and F. B. Rodríguez, "The influence of ICT on learning in graphic engineering," *Procedia - Social and Behavioral Sciences*, vol. 237, pp. 737–744, Feb. 2017, doi: 10.1016/j.sbspro.2017.02.115.
- [39] D. Lee, S. L. Watson, and W. R. Watson, "The influence of successful MOOC learners' self-regulated learning strategies, self-efficacy, and task value on their perceived effectiveness of a massive open online course," *The International Review of Research in Open and Distributed Learning*, vol. 21, no. 3, pp. 81–98, Mar. 2020, doi: 10.19173/irrodl.v21i3.4642.
- [40] J. B. J. Bottentuit, "Assessment for learning with mobile apps: exploring the potential of Quizizz in the educational context," *International Journal of Development Research*, vol. 10, no. 1, pp. 33366–33371, 2020.

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